OMNIVIEW XL/XE

By

CDY Consulting

NEW OMNIVIEW XL/XE FEATURES

OMNIVIEW XL/XE now has several new features which solve the compatability problem associated with the 800XL/130XE. OMNIVIEW XL/XE does this by having an ultra compatible 400/800 style OS which will copy itself into RAM, freeing up the $C000 page. In addition, OMNIVIEW XE has resident ramdisk handlers which allow you to use the extra 64k of RAM in the XE as an ultra fast disk drive. Add the other outstanding features of OMNIVIEW XL/XE, namely, 80 column emulation under SpeedScript 80, Letter/Data Perfect, BASIC, MAC65, ATR8000 CPM, etc., and the Fastchip floating point package for significantly faster math operations, and you have an outstanding value for any 800XL/130 XE owner!

Improved 400/800 compatibility:

(Developed by CAL COM, 5295 Cameron Drive #505, Buena Park, Ca 90621) The OMNIVIEW XL/XE operating system runs virtually every piece of software written for the ATARI computer. Besides being coded closely to the older OSB, it also has the capability of copying itself into RAM, freeing up the $C000 page for your applications. This means 4k more RAM for programs like Visicalc, modem programs, word processors, etc. It also means added compatibility with highly protected games which look for ROM in the $C000 page as a part of their misguided protection schemes (e.g. Electronics Arts).

To copy the OS into RAM (from $D800 to $FFFF), hold down the SELECT key while pressing RESET. To restore the OS to ROM, press RESET by itself. From this point on, the RAM version of the OS will be preserved, even if you switch the OS to ROM and back to RAM. Thus, any changes you may make to the OS in RAM remain in effect as long as you do not power down. In addition, if you hold down the SELECT key during powerup, the OS will be copied into RAM and it will stay in RAM even if you press RESET. Please note that the 80 column emulation is not available when running the OS out of RAM.

There are two other features designed to give increased compatibility: the cursor speed and the OPTION key BASIC activation during powerup. The cursor speed is the same as the original XL/XE OS to remain compatible with the SYNAPSE software (SYNCALC, SYNFILE+, etc.) which speed up the cursor. Also, the meaning of the OPTION key during powerup is just opposite of the original OS: hold down the OPTION key to activate BASIC. This seems to be the preference of most people. In addition, there is the added function of the HELP key. Instead of using CTRL-1 the HELP key now functions as the scroll control for program listings.

1

Turning on 80 columns:

80 column emulation is activated from the keyboard by typing CTRL-a and hitting RESET. To return to 40 columns, type a key without CTRL and hit RESET. Don't try this if running OS in RAM. Also see "Technical Details".

Changing screen colors:

Switch the screen colors in the 80 column mode by holding down the START key while typing a letter. If this does not work (as in Letter Perfect), try holding down the START key while pressing RESET. However, since this combination is also used to install the ramdisk handlers, read the next section before using this second technique.

Installing the resident Ramdisk handlers: (130XE only)

The resident Ramdisk handlers in OMNIVIEW XL/XE allow you to use the extra 64k RAM of the 130XE as an ultra fast 512 sector single density disk drive in conjunction with any DOS which uses standard SIO calls (SE459 and SE453) and does not hide itself underneath the cartridge or OS (e.g. Atari 2.0s, MYDOS, SMARTDOS, etc.). In addition you will find it possible to use the Ramdisk with boot programs like Letter and Data Perfect.

The installation is simple: Type a number (1 to 8) corresponding to the drive number you wish to assign the Ramdisk, hold down the START key, and press RESET. (Note: If you are using DOS 2.0 and it is not configured for more than 2 drives, it will be necessary to configure it accordingly. First boot up BASIC with DOS 2.0, then, after you have a 'Ready' prompt type 'POKE 1802, 15' for 4 drives or 'POKE 1802,131' for 8 drives. Now go to DOS, write the DOS files back out to the disk. You have now configured DOS to accept either 4 or 8 drives online.) Continue to hold the START button down until DOS returns or you go into BASIC. The reason for this is to allow the ramdisk handler enough time for the installation process. If you do not hit a number prior to pressing START/RESET, drive 1 will be assumed. In Letter/Data Perfect this combination is also used to change the screen colors, so assign the Ramdisk as drive 3 if you do not wish to use it in these environments. For example, in BASIC:

1) Type DOS to go to DOS. Now type 2 and START/RESET to install the Ramdisk as drive 2.

2) Since you are now back in Basic, go to DOS again, format and write DOS files to drive 2. (Note that we suggest doing a directory on the drive # you have assigned the ramdisk to. This is to show the DOS that the drive exists)

3) Now Type 1 and START/RESET to install the Ramdisk as drive 1 if you so desire.

You can use the enclosed files on the SpeedScript 80 diskette to install the ram disk handlers. The files named INSTALL1 and INSTALL2 are the ramdisk installation files. To use them simply load them from DOS depending on

which drive you wish to assign the ramdisk. You will still have to format the disk you have assigned to be the ramdisk. Again we suggest doing a directory on the drive number the ramdisk has been assigned.

To create your own file in assembly language type as follows:

```
LDA #2(the 2 denotes the drive number, this can be changed)
STA $94
LDA SD301
AND #$7F
STA SD301
JSR SCFAE
LDA SD301
ORA #$80
STA SD301
RTS
```

Note that any attempt to use more than 512 sectors of the Ramdisk will result in an I/O ERROR.

The Overview of OMNIVIEW XL/XE

OMNIVIEW XL/XE takes advantage of the high resolution graphics mode built into the ATARI to generate an 80 column screen editor essentially identical to the ATARI screen editor (E: S:). Thus, you can use OMNIVIEW XL/XE in any environment where you would normally use the 40 column "E:" (e.g. BASIC, Assembler/Editor, Mac/65, BASIC XL, modem programs, etc.). The character font was specially designed to be legible on an ordinary TV set! A monochrome monitor is recommended, but not really necessary for casual 80 column operation. The Bit-3 versions of LJK's 80 column Letter and Data Perfect have been modified to support OMNIVIEW XL/XE, along with SpeedScript 80. Other programs are very likely to follow once software developers realize the potential of the OMNIVIEW XL/XE.

Use of OMNIVIEW XL/XE 80 column E:

You can activate the 80 column mode in most environments (e.g. BASIC, DOS, etc.) by hitting CONTROL a-RESET. This will do a normal warmstart except that 40 column E: and S: will be replaced by 80 column E: and S:. In addition, the 80 column mode can be activated from assembly language with 'JSR C001' or from BASIC with 'X=USR(49152)'. Once activated, the 80 column E: acts just like the ATARI 40 column E: except for a few minor points. First, the logical line is 80 characters long (1 physical line) instead of 120. If you wish to edit a line longer than 80 characters, as you might in BASIC, hit SYSTEM RESET to take you back to 40 column mode. Secondly, you cannot set the tabs as you can in 40 column mode. Thirdly, neither split screen nor

line drawing is supported. However, there is a feature which will allow a mixture of 80 column text and graphics on the screen. This will be described later.

Thus, any program which uses pure E: in its simplest form (no split screen or line drawing) for its screen I/O should work in 80 column mode. Even programs which reference and manipulate internal E: variables (ROWCRS, COLCRS, LMARGN, RMARGN, OLDCHR, etc.) should work fine because every effort was made to preserve the meanings of these variables in 80 column mode. One possible exception would be a program which relies on characteristics specific to a 40 column screen like, for instance, that the line will wrap at the 40th column. Likewise, programs like VISICALC, ATARIWRITER, MEDIT, etc. will not work because their internal design assumes a 40 column screen.

Theory Behind OMNIVIEW XL/XE

OMNIVIEW XL/XE uses ANTIC mode F (BASIC GRAPHICS 8), which gives you a resolution of 320 by 192 pixels. If you use a 4 by 8 character cell, this gives you exactly 80 columns by 24 rows. One drawback to this scheme is that it uses $1E00 bytes (almost 8k) of memory for the screen data alone. This is rarely a problem and, when it is, you can always drop into the 40 column mode anyway. Another drawback is that the format of the screen data is not nearly so convenient as BASIC GRAPHIC 0 (which is essentially stored as ATASCII). Each character must be translated to pixel data representing that character from the screen! This gets especially tricky when E: goes to read a character from the screen! This requires a search of the character data table to find a match for the pixel data representing that character. You can see how this could be quite slow, but this part of the code has been optimized for speed and the small delay is hardly noticable. For example, it will take a fraction of a second longer for the machine to respond when you type a line of BASIC and hit RETURN.

Technical Details

When you activate 80 column mode with CNTRL-a/RESET, 'JSR $C001', or 'X=USR(49152)', OMNIVIEW XL/XE initializes the 80 column screen and installs the 80 column E: and S: in the handler address of the table at $31A(HATABS). Afterwards, all CIO calls to E: and S: will get vectored into OMNIVIEW XL/XE. By the way, when OMNIVIEW's E: GET CHAR routine fetches a character from the keyboard, it vectors through the K: entry in HATABS instead of cheating like the OS does and calling the keyboard handler directly. This would allow you to redirect the keyboard input if you so desire.

As mentioned earlier, there is a way to mix 80 column text and graphics on the same screen. While the first line of text is always the top row, the last is set with the variable BOTSCR ($2BF), which ranges from 0 to 23. If you were to set BOTSCR to anything less than 23 then you could use the remaining lower part of the screen for anything you wanted by simply modifying the display list. Also, since OMNIVIEW uses graphics 8 to generate the 80 column characters, there is nothing to keep you from drawing on the screen directly. This opens up all sorts of exciting possibilities which were inconceivable with the other dedicated 80 column boards for the ATARI. For example, wouldn't it be nice to have a word processor which would allow you to draw diagrams in with the text? Some software developer ought to jump on that one and incorporate that into the enclosed 80 column version of Speed Script 80 that comes with the OMNIVIEW XL/XE at no charge. Contact CDY for the source code for Speed Script 80.

Here is a memory map of the screen data area:

RAMTOP*256	->RAMTOP HOLDS THE NUMBER OF PAGES OF RAM
RAMTOP*256-$126	->FUTURE BUFFER FOR LAST LINE DELETED (LINBUF)
RAMTOP*256-$1F0	->BEGINNING OF DISPLAY LIST
RAMTOP*256-$1FF0	->BEGINNING OF DISPLAY DATA (SAVMSC)
RAMTOP*256-$2001	->LAST BYTE OF FREE RAM (MEMTOP)

Here are the definitions of OMNIVIEW XL/xe variables:

Name	Addr	Description
DSTAT	$4C	USED TO SAVE STATUS
TEMP	$50	TEMPORARY REGISTER
HOLD1	$51	TEMPORARY REGISTER
LMARGN	$52	LEFT MARGIN (0-79)
RMARGN	$53	RIGHT MARGIN (0-79)
ROWCRS	$54	ROW CURSOR IS ON (0-23)
COLCRS	$55	COLUMN CURSOR IS ON (0-79); DISCERNS BETWEEN ODD AND EVEN CHARS DURING SCREEN OUTPUT (OUTCHJ)
LFTMSK	$56	INVERSE VIDEO MASK FOR EVEN COLUMNS
RGTMSK	$57	INVERSE VIDEO MASK FOR ODD COLUMNS
SAVMSC	$58	2 BYTE POINTER TO BEGINNING OF DISPLAY DATA
OLDCHR	$5D	INTERNAL FORMAT OF CHARACTER UNDER CURSOR
OLDADR	$5E	2 BYTE POINTER TO CURRENT CURSOR POSITION (ALSO SEE COLCRS) WITHIN SCREEN DATA
ADRESS	$64	2 BYTE POINTER TO CURRENT CHARACTER
MLTTMP	$66	2 BYTE POINTER TO WHERE NEXT CHAR WILL BE OUTPUT (ALSO SEE COLCRS) WITHIN SCREEN DATA
RAMTOP	$6A	NUMBER OF 256 BYTE PAGES OF RAM AVAILABLE
BUFCNT	$6B	BUFFER COUNT DURING E: GET CHAR
BUFSTR	$6C	RETAINS START OF LOGICAL LINE DURING E: GET CHAR (ROW/COL)
DILIST	$70	TEMP 2 BYTE PTR USED DURING GENERATION OF DISPLAY LIST
TEMP1	$79	TEMPORARY REGISTER
INSDAT	$7D	TEMPORARY REGISTER
LINBUF	$7E	2 BYTE POINTER TO A LINE BUFFER JUST PAST DISPLAY LIST
GPRIOR	$26F	PRIORITY SELECTION REGISTER
HOLD3	$29D	TEMPORARY REGISTER
ESCFLG	$2A2	ESCAPE FLAG: USED TO DISPLAY CTRL CODES
TMPROW	$2B8	TEMPORARY STORAGE FOR ROWCRS
SCRFLG	$2BB	SCROLL FLAG: SET IF SCROLL OCCURRED
SHFLOK	$2BE	FLAG FOR SHIFT AND CONTROL KEYS
BOTSCR	$2BF	THE NUMBER OF TEXT ROWS AVAILABLE FOR PRINTING
MEMTOP	$2E5	2 BYTE POINTER TO THE TOP OF FREE MEMORY
CRSINH	$2F0	CURSOR INHIBIT FLAG: NON-ZERO TURNS CURSOR OFF
ATACHR	$2FB	LAST ATASCII CHARACTER READ OR WRITTEN
CH	$2FC	INTERNAL HARDWARE VALUE OF THE LAST KEY PRESSED
DSPFLG	$2FE	DISPLAY FLAG: NON-ZERO WILL DISPLAY CTRL CHARS
SSFLAG	$2FF	START/STOP FLAG: NON-ZERO WILL SUSPEND SCREEN OUTPUT

Use of OMNIVIEW XL/XE WITH LJK'S Letter Perfect

Any version of Letter Perfect which supports the Bit-3 board can, with the appropriate patches, be made to work with OMNIVIEW XE/XL. Some special fixed entry points were added to OMNIVIEW XE/XL to provide the necessary hooks and these can be used in your own software if needed:

CURSNJ	SCFB1	TURN ON CURSOR (@ OLDADR ($5E)
CURSFJ	SCFB4	TURN OFF CURSOR (@ OLDADR ($5E)
DELRTJ	SCFB7	CLEAR TO EOL BASED UPON MLTIMP ($66) AND COL # IN REG Y
OUTCHJ	SCFBA	OUTPUT CHAR IN ACC TO SCREEN (@ MLTIMP ($66) AND COLCRS ($55)
SCROLJ	SCFBD	SCROLL SCREEN UP
SCRLDJ	SCFC0	SCROLL SCREEN DOWN

Here are the patches to the 80 column side of Letter Perfect Version 3.0. Use OMNIMON or any sector editor to modify a backup of the original disk (use and sector copier to make the backup). DO NOT MODIFY THE ORIG-INAL DISK! For $10.00, CDY will do the patches for you. Simply send a backup copy of the 80 column side of the disk along with a check to CDY. For patches to other versions, contact CDY Consulting (214-235-2146).

```
SECTOR $2D BYTE $30:
WAS SEC
NOW SD9

SECTOR $2D BYTE $53:
WAS S65 EA 48 0A 0A 0A 85
    S64 68 4A 4A 4A 85 65
NOW SEA EA 85 64 A9 00 85 65
    S8A 48 20 86 25 68 60

SECTOR $2D BYTE $72:
WAS SA5 EA 69 04 29 7F 85 EA
    S20 86 25 20 BF 25
NOW S8A 48 20 BD CF 68 AA
    S58 85 65 AA A5

SECTOR $2E BYTE $00:
WAS S20 4B 25 4C BF 25 EA
    SA0 55 25 A9 0D 8D A5
    SA5 64 8D 81 80 D5
    S80 D5 A5 65
NOW S65 4C F7 25 BF A2 06
    S06 64 26 65 CA F9 A5
    S58 18 65 64 85 64
    S65 65 60

SECTOR $2E BYTE $47:
WAS SA9 00 20 FF 25 C8 50
    S90 F3 60 A4 55 98 65
    S64 85 66 A5 69 00 85
    S8D 81 13 8D D5 A5 66
    SA5 67 D5 A9 12 8D D5
    S80 D5 AD 80 D5 10 FB
NOW S8A 20 48 20 B7 CF 68
    S50 38 60 A4 55 98 4A
    SD0 13 85 66 EA 65 00
    SA5 EA 20 85 48 8A 4B
    S68 AA 68 BA CF EA EA
    S20 BF 25 4C 4B 60

SECTOR $2F BYTE $00:
WAS S48 78 68 8D 85 20 F9
    S25 28 60 20 25 A9 0F
    S8D 80 D5 A5 66 8D D5
    SA9 0E 8D 80 D5 67 8D
    S81 D5 A9 09 48 0A 8D
NOW S48 78 68 68 20 E1 28
    S25 28 60 20 D2 25 20
    S26 20 B1 CF 60 A5 85
    S5E A5 67 85 5F 60 8D
    S81 D5 A9 09 20 B4 60

SECTOR $2F BYTE $40:
WAS SA2 10 8E 08 D5 CA 80
    SD5 BD CF 13 81 D5 CA
    S10 F4
NOW S20 59 CA CA 9E A6
    SA2 FF CA 86 9F EA EA

SECTOR $2F BYTE $72:
WAS S20 86 25
NOW SEA EA EA
```

OMNIVIEW XL/XE with LJK's Letter Perfect Version 3.2, 3.3

Here are the patches to the 80 column side of Letter Perfect Version 3.2, 3.3. Use OMNIMONXL of any sector editor to modify a backup copy of the original disk (use any sector copier to make the backup). DO NOT MODIFY THE ORIGINAL DISK! For $10.00 CDY will do the patches for you. Simply send a backup copy of the 80 column side of the disk along with a check to CDY. For patches to other versions, contact CDY Consulting (214-235-2146)

```
SECTOR $2D BYTE $39:
WAS SEC                              NOW SD9

SECTOR $2D BYTE $5C:
WAS S65 EA 48 0A 0A 0A 85            NOW SEA EA 85 64 A9 00 65
    S64 68 4A 4A 4A 85 65                S8A 48 20 8F 25 68 AA 60

SECTOR $2D BYTE $7B:
WAS SA5 EA 69 04 29

SECTOR $2E BYTE $00:
WAS S7F 85 EA                        NOW S8A 48 BD CF

SECTOR $2E BYTE $50:
WAS S90 00 20 08 26 C8 50            NOW S8A 48 20 B7 CF 68 AA A0
    S64 85 66 A5 55 98 18                S50 38 60 A4 55 98 4A 18
    S67 A9 13 8D 80 D5 65                S65 64 85 66 A5 65 69 00
    S8D 81 D5 A9 12 80 A5                SD0 13 85 EA 66 CA D0 00
    SA5 67 8D A9 1F 80                   S68 AA 68 BA CF EA 48 67 60

SECTOR $2F BYTE $00:
WAS S80 D5 80 80 D5 10 FB 60 08      NOW S20 C8 25 EA EA 54 60 08
    S48 78 68 8D 85 20 02                S48 78 20 4C 25 28 60
    S26 28 60 A5 66 20 0F                S25 28 60 20 EA 25 20 1E
    SA9 0E 80 A5 80 D5                   S26 20 DB 25 20 85
    S8D D5 66 81 8D                      S80 D5 CF A5 66 85
    S81 D5 A9 09 48                      S5E A5 67 85 5F 20 8D
                                         S55 D5 A5 09 20 8D

SECTOR $2F BYTE $49:
WAS SA2 10 8E 08 D5 CA 80            NOW S20 01 C0 A5 58 9E A6
    SD5 BD CF 13 8D D5 CA                S59 CA CA 86 9F EA EA EA
    S10 F4                               SA2 FF

SECTOR $2F BYTE $7B:
WAS S20 8F 25                        NOW SEA EA EA
```

OMNIVIEW XL/XE with LJK's Letter Perfect Version 6.0 thru 6.5

Here are the patches to Letter Perfect Version 6.+. Use OMNIMONXL or a sector editor to modify a backup copy of the original disk (use any sector copier to make the backup). DO NOT MODIFY THE ORIGINAL DISK! For $10.00 CDY will do the patches for you. Simply send a backup copy of the disk along with a check to CDY. For patches to other versions, contact CDY Consulting.

```
SECTOR $62 BYTE $1A:
WAS S31 02 CA                        NOW SE6 02 EA

SECTOR $63 BYTE $0D:
WAS S65 CF 48 0A 0A 0A 85            NOW SEA EA 85 64 A9 00 65
    S64 68 4A 4A 4A 85 65                S8A 48 20 C6 08 68 AA 60

SECTOR $65 BYTE $0C:
WAS SA5 CF 69 04 29 7F 85 CF         NOW S8A 48 20 BD CF 68 AA A9
    S20 C6 08 20 F2 07 20 85             S58 85 64 A5 59 85 65 4C
    S07 4C                               SE0 07

                    BYTE $42:
WAS SA9 13 8D 80 D5 98 18 65         NOW S98 4A 18 65 64 85 66 A5
    S64 85 66 8D 81 D5 A9 12             S65 69 00 85 67 60 85 A5
    S8D 80 D5 A5 65 69 00 85             S98 48 8A 48 AA 68 8D CF
    S67 81 D5 A9 1F 8D 80 BA             SCF 68 AA 48 A5 20 CF 20
    SD5 AD 80 D5 10 FB 80                S07 4C 85 07 60 20 F2

SECTOR $64 BYTE $66:
WAS S8D 85 D5                        NOW S20 D0 07
                    BYTE $6A: WAS S4C
                    BYTE $70:
                    BYTE $78: WAS S00

SECTOR $65 BYTE $0C:
WAS SA0 0F 8C 80 80                  NOW S20 77 08 20 B1 60 A5
    S81 D5 88 8C 80                      S66 85 5E A5 67 85 5F 60

WAS SA5 A9 A0 A0 0A                  NOW S20 20 B4 CF 60
    S80 D5 BD 02 08                      SC0 85 0D EA A9
    SCA 10 F4 E8                         SEA EA A2 00

SECTOR $63 BYTE $46:
WAS SA2 10 8E 08 D5 A2 0D 8E         NOW S20 01 C0 A9 01 85 09
    S80 D5 BD 02 08 8D 81 D5             SC0 85 0D EA A9 0C EA
    S07 8D 81 D5 C8 8C                   SEA EA EA EA EA

SECTOR $53 BYTE $00:
WAS S20 C6 08                        NOW SEA EA EA

SECTOR $50 BYTE $0A:
WAS S20 E3 07 29 20 F0 F9 A0         NOW SA2 06 06 26 65 CA D0
    S0C 8C 80 D5 D5 A5 CF 20             SF9 A5 58 18 65 64 85
    S07 8D 81 D5 C8 8C                   SA5 59 65 65 85 65 60

SECTOR $6A BYTE $4D:
WAS S0D 84 0C                        NOW S0B 84 0A

SECTOR $79 BYTE $48:
WAS S42 69 74 20 33 20 66 75         NOW S4F 4D 4E 49 56 49 45 57
    S6C 6C 2D 76 69 65 77 20             S20 38 30 20 43 6F 6C 85
    S38 30                               S6D 6E 6E

                    BYTE $6B:
WAS S63 6F 6C 75 6D 6E               NOW S52 2E 49 2E 50 2E
```

OMNIVIEW XL/XE with Data Perfect Version 2.0 thru 2.5

Here are the patches to 80 column Data Perfect. Use OMNIMONXL or any sector editor to modify a backup copy of the original disk (use any sector copier to make the backup). DO NOT MODIFY THE ORIGINAL DISK! For $10.00 CDY will do the patches for you. Simply send a backup copy of the disk along with a check to CDY. For patches to other versions, contact CDY Consulting.

SECTOR $02 BYTE $06:
WAS $31
NOW $E6

SECTOR $04 BYTE $02:
WAS $30
NOW $E5

WAS $31   BYTE $07:
NOW $E5

SECTOR $05 BYTE $1E:
WAS $42 74 20 33 00 33 3E
    $20 20 41 75 73 74 69 6E
    $20 46 72 61 6E 6B 6C 6C
    $6E
NOW $4F 4D 4E 49 56 49 57
    $20 38 30 00 33 3E 20 20
    $41 75 73 74 69 6E 6E 6E 38
    $30

SECTOR $09 BYTE $46:
WAS $30
NOW $E5

WAS $31
NOW $E6

SECTOR $8F BYTE $57:
WAS $48 4A 4A 4A 4A 85 E1 68
    $0A 0A 0A 0A 85 E0
NOW $85 E0 A9 00 85 E1 98 48
    $20 6D 0D 68 A8 60

SECTOR $8F BYTE $6F:
WAS $8D 85 D5 20 67 0D
NOW $20 54 0D EA EA EA

SECTOR $90 BYTE $51:
WAS $00
NOW $20

SECTOR $91 BYTE $59:
WAS $F8 60 20 44 0D AD 83 D5
NOW $F6 60 20 44 0D BD 80 04

WAS $60 0F 8C 80 D5 A5 66 8D
    $81 D5 88 8C
NOW $A5 66 85 5E A5 67 85 5F
    $20 B1 CF 60

SECTOR $91 BYTE $0D:
WAS $A9 20 A0 0A
NOW $20 B4 CF 60

WAS $7B
NOW $83

BYTE $46:
WAS $13 8D 80 98 18 65 85 66
    $E0 85 66 8D 81 D5 A9 12
    $80 E5 A5 E1 69 00 85
    $8D 81 D5 A9 1F
NOW $98 4A 18 65 E0 85 66 A5
    $E1 69 00 85 67 85 56 A5
    $98 48 8A 48 A5 56 20 BA
    $CF 68 AA 68 A8 60

BYTE $6D:
WAS $50 5B 39 19 04 18 18
    $78 09 20 09 00 A2 10
    $8E 08 D5
NOW $A0 06 06 E0 26 E1 88 D0
    $F9 A5 58 65 E0 85 E0 A5
    $59 65 E1

SECTOR $92 BYTE $00:
WAS $CA 8E 80 D5 BD 6D 0D 8D
    $81 D5 CA 10 F4
NOW $85 E1 60 20 01 C0 EA EA
    $SEA EA EA EA

USE of OMNIVIEW XL/XE with ATR8000

OMNIVIEW XL/XE has a built in terminal emulator for use with the ATR8000 which provides a serial interface for communication with the ATR and most of the standard cursor controls necessary for operation with CPM programs. The terminal emulator which will be referred to as 'ATRMON' from this point on, can be called up at any time and it is even possible to switch back and forth between the ATARI and CPM environments.

Turning on ATRMON

First of all you must activate the 80 column OMNIVIEW XL/XE screen editor (e.g., with CONTROL-A RESET). Then hold down the START, SELECT, and OPTION buttons and type any letter on the keyboard. You should hear the drive(s) reset and the ATRMON header should appear after a couple of seconds. Now put in your CPM system disk and type 'B(return)' to boot up CPM. While ATRMON is active, the START button will allow you to switch screen colors. (By the way, even in ATARI mode you can switch screen colors by holding down the START button and typing any key. This also holds true of powerup, if you press the START button after the disk boot process has begun and hold it down until the boot is finished. This allows you to change the screen colors of Letter Perfect.)

Leaving ATRMON

Leave ATRMON in almost the same way you entered it, i.e., by holding down the START, SELECT, and OPTION buttons, but this time it is not necessary to type another key. You will then see the command 'GOATARI' appear on the screen. This is to fetch the extrinsic command 'GOATARI' which is used to reset the ATR from CPM so that the drives can once more be accessed in the ATARI environment. To create this file, use DDT as follow:

1) Under CPM, insert a disk with DDT on it and type 'DDT(return) to enter DDT.

2) Type 'A100(return) JMP 0F00(return)(return) G0'.

3) Back at the command level, type 'SAVE 1 GOATARI.COM(return)'.

The short file 'GOATARI.COM' will have to be on any CPM disk from which you might want to return to the ATARI environment. The alternative is to reach behind the ATR and reset it whenever you return to the ATARI environment.

Technical Details

The ATRMON portion of OMNIVIEW XL/XE resides in what was the diagnostic portion of the XL/XE operating system. This gets mapped in from $5000 to $57FF whenever ATRMON is active, but is otherwise deselected. The serial input buffer is as large as possible to prevent the ATR from over-running the OMNIVIEW XL/XE screen output, which is relatively slow compared to the serial baud rate. This however has a nice side effect: whatever

was last printed to the CPM console (CON:) will remain in the buffer when you return to the ATARI mode.

If, for example, you were in DOS when you went to CPM, you will return directly to DOS when you leave CPM. You could then do a binary save on memory starting at $5800 until the end of user memory if you so desire. Thus, if you had just typed a text file under CPM, you would now have the text in an ATARI file. All that remains is to clean it up with a text editor. OMNIVIEW XL/XE further simplifies the task by converting all $0D's and $0A's (CRLF's) to $00 and $9B, respectively, when it leaves ATRMON.

ATRMON implements almost all of the CTRL codes and ESC sequences listed in the ATR8000 manual. In fact, the ones not implemented are CTRL->, ESC 7, and ESC Zn. If anyone sees a reason why these or any other features should be incorporated in the ATRMON of OMNIVIEW XL/XE, please contact CDY Consulting and we will be happy to see about adding them.